Children's Environmental Health

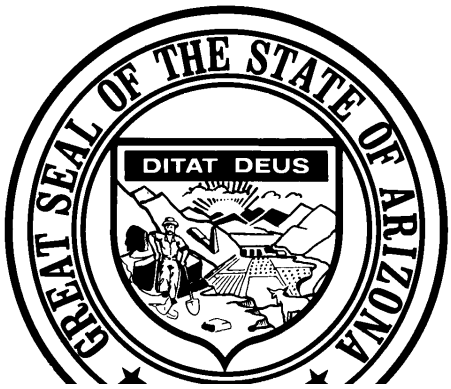
ANNUAL REPORT 2003

Arizona Department of Health Services

Bureau of Epidemiology and Disease Control

Office of Environmental Health

July 2004



Janet Napolitano, Governor
State of Arizona

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INTRODUCTION

The Arizona Department of Health Services, Office of Environmental Health made significant revisions in mission and modifications in programs in response to the Governor's Children's Environmental Health Initiative. Governor Janet Napolitano stated her commitment to provide a clean and healthy environment for Arizona's children and revealed her C.A.R.E strategy to achieve this goal. The four step C.A.R.E strategy is:

Coordinate individuals, groups, academia and government involved in children's environmental health issues, initially focusing on air quality and asthma
Assess and prioritize the environmental health factors affecting Arizona's children
Reduce the number and types of contaminants adversely affecting children
Educate citizens about environmental hazards and how to reduce children's exposure

The full report can be found at http://www.azdeq.gov/function/about/ceh.html.

The Children's Environmental Health Section was developed from the Office of Environmental Health's existing Investigation and Surveillance section and is dedicated to improving environmental health in children's settings. The Children's Environmental Health Section now encompasses the Childhood Lead Poisoning Prevention Program, the SunWise School Program and currently plans are underway to incorporate additional programs including the Environmental Protection Agency's Tools for Schools and Integrated Pest Management program The Children's Environmental Health Section became actively involved with the U.S. Environmental Protection Agency's Border 2012 program and strengthened collaboration with the Office of Border Health to target efforts on the Arizona-Sonora, Mexico border.

The Office of Environmental Health began by conducting an assessment of the environmental health factors that most adversely affect Arizona's children. This report was presented to the Arizona Department of Environmental Quality and other interested organizations to prioritize and further develop specific objectives and strategies to reduce environmental health hazards to children.

The table below shows the environmental exposures that significantly affects the health of Arizona's children.

Ambient Air Pollutants and Asthma
Allergens and Asthma
Secondhand Tobacco Smoke and Asthma
Coccidioidomycosis (Valley Fever)
Lead Poisoning
Sun Exposure
Methylmercury in Fish
Pesticide Exposure
Noise

The full report can be found at http://www.azdhs.gov/phs/oeh/pdf/gov_chldrn_hlth_rpt.pdf.

Childhood Lead Poisoning Prevention Program

Childhood lead poisoning is a significant environmental health problem and continues to affect Arizona's children. Lead poisoning adversely affects nearly all organ systems of the body and is especially harmful to the developing brain and nervous system. Studies have shown that a child's IQ will drop one to three points for every increase of 10µg/dL in the child's blood lead level. Once the lead exposure is reduced the damage can be stopped, it is not yet know if the damage can be reversed.

Children under the age of six years are particularly susceptible to lead poisoning. Ingestion of lead through natural hand-to-mouth behavior is the primary exposure pathway for children. Though most children do not show symptoms of lead poisoning some symptoms may include headaches, stomachaches, lack of appetite, fatigue, irritability and vomiting. At very high blood lead levels (≥ 70 µg/dL), children can suffer seizures, coma and even death. It is only through a blood test that lead poisoning is detected. The Arizona Health Care Cost Containment System (AHCCCS) requires providers to routinely perform a blood lead test for children one year old and again at two years old.

The Arizona Childhood Lead Poisoning Prevention Program is primarily funded from the Centers for Disease Control and Prevention. The Centers for Disease Control and Prevention has charged all grantees with achieving elimination of childhood lead poisoning by 2011. The Arizona Childhood Lead Poisoning Prevention Program in collaboration with the Arizona Childhood Lead Poisoning Prevention Coalition has developed an elimination plan with implementation to begin July 1, 2004.

The main focus areas of the elimination plan include:

- **Lead Based Paint and Housing**
- **Lead Containing Home Remedies and Lead Glazed Pottery**
- **Blood Lead Screening**

The main responsibilities of the Arizona Childhood Lead Poisoning Prevention Program is to conduct surveillance activities, provide case management including environmental investigations and perform education and outreach activities.

Surveillance

The Arizona Childhood Lead Poisoning Prevention Program maintains a statewide registry for recording all blood lead test results. Physicians are required to report elevated blood lead levels of ≥10µg/dL for children and laboratories are required to report all blood lead test results. Laboratories and health care providers reported 261 children with lead poisoning (≥10µg/dL) in 2003. Figure 1 displays the number of childhood lead poisoning cases from 1997 to 2003. Eighty-five percent (85%) of the 2003 childhood cases were in the lower ranges of lead poisoning (10 to 19µg/dL). The remaining fifteen percent (15%) of cases were in the moderate to severe range of lead poisoning (≥20µg/dL).

The majority of children with lead poisoning were aged 0 to 35 months. Figure 2 shows the ages of children reported with lead poisoning.

Figure 1
Number of AZ Childhood Lead Poisoning Cases by Year

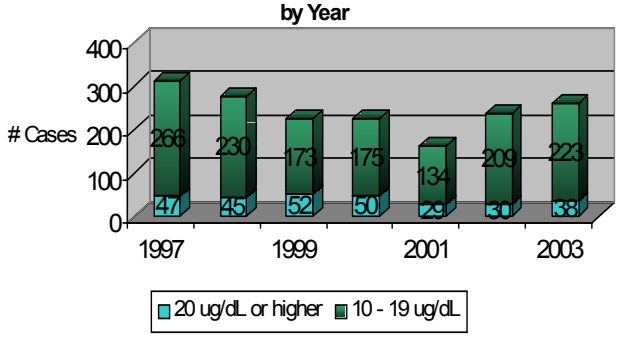
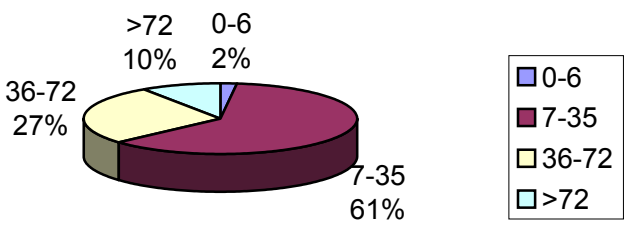


Figure 2
Age in Months
2003



Childhood Lead Poisoning Prevention Program

Figure 3 displays the childhood lead poisoning cases by race/ ethnicity.

Figure 3
Race & Ethnicity
2003

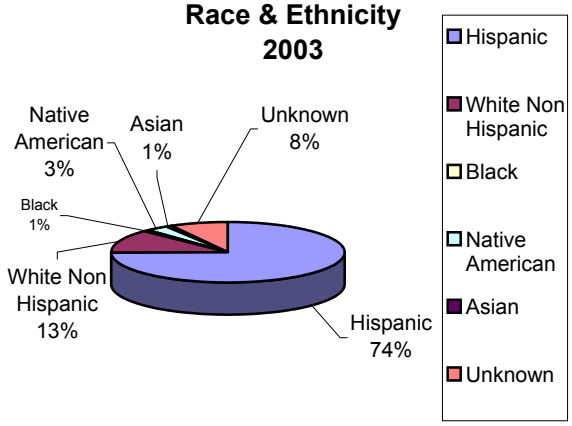
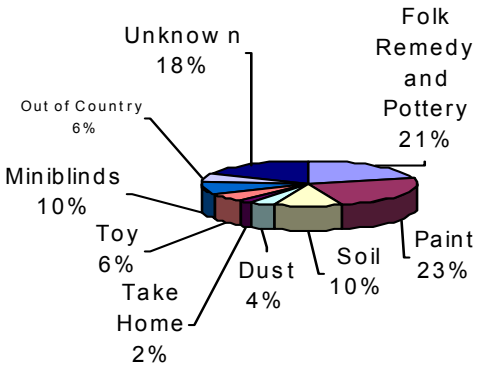


Figure 4
Sources of Lead Exposure
2003



Potential sources of lead exposure were identified during investigations of the child's environment for cases with blood lead levels of ≥20µg/dL, persistent blood lead levels of 15 to 19µg/dL or when requested by the physician for lower blood lead levels. Paint, soil, dust, and water samples are routinely taken for laboratory analysis. Other sources investigated included lead based home remedies, imported pottery, toys, hobbies and take-home exposure. Lead based paint, home remedies and pottery remain a significant source of exposure among childhood lead poisoning cases. Figure 4 illustrates the distribution of the lead exposures identified.

Case Management

The Arizona Childhood Lead Poisoning Prevention Program provides case follow-up that meets or exceeds the Centers for Disease Control and Prevention 2002 guidelines in "Managing Elevated Blood Lead Levels Among Young Children: Recommendations from the Advisory Committee on Childhood Lead Poisoning Prevention." For lead poisoning cases of 10 to 19µg/dL, the Arizona Childhood Lead Poisoning Prevention Program provides prevention counseling to the family by phone and mails educational materials. The physician is also contacted to encourage continued monitoring of the child's blood lead levels until normal. If the family cannot be contacted by telephone or mail, the program refers the case to the health care provider and health plan.

The program performs environmental investigations for cases that are moderate to high in severity, ≥20µg/dL, for persistent levels of 15 to 19µg/dL and by request from physicians at lower levels. Environmental investigations consist of an in-home interview, environmental sampling to identify lead sources, and specific intervention information for the family. Some county health departments and health plans assist the program with case follow-up. Case management involves contacting the family to ensure proper medical and environmental follow-up. The program provides follow-up information to the case's physician that is essential to clinical management. This information includes source identification and prevention recommendations.

Education & Outreach

Lead exposure prevention and education is essential to ensuring declining blood lead levels in Arizona's children.

The Anti-Lead media campaign warned against the dangers of using lead based home remedies and pottery. The campaign consisted of public relations, community outreach, and paid and public service announcement media placement. Billboards were also placed along the high risk Arizona-Sonora, Mexico border and high risk areas in Phoenix and Tucson. Several television interviews were aired and newspaper articles published throughout the year.

A pottery exchange fair was held in collaboration with the Wal-Mart at 3721 E. Thomas Road in Phoenix. Customers were able to

CHILDHOOD LEAD POISONING PREVENTION PROGRAM

trade in their lead glazed cookware and receive coupons for lead-free cookware. Many families received demonstrations on alternative uses for the lead glazed cookware and received health education on the dangers of cooking and storing food in lead glazed pottery.

Lead Program staff demonstrate alternative uses for lead glazed pottery

The Arizona Childhood Lead Poisoning Prevention Program participated in several health fairs statewide providing health education and materials.

The Arizona Childhood Lead Poisoning Prevention Program continues to collaborate with local organizations and agencies to promote prevention education and provide additional services to families of lead poisoned children. The City of Phoenix Lead Hazard Control Program has been a long time partner and greatly enhances the services provided by the Arizona Childhood Lead Poisoning Prevention Program. The City of Phoenix Lead Hazard Control program takes referral for homes which have been found to contain lead based paint hazards. Ten cases referred to the City of Phoenix Lead Hazard Control program qualified for lead remediation and abatement this year.

The Housing Authority of Cochise County was awarded a lead hazard control grant this year from the US. Department of Housing and Urban Development. This program will provide lead remediation and abatement to one of the highest risk areas for lead poisoning due to older housing. The Arizona Childhood Lead Poisoning Prevention Program has begun working closely with the Housing Authority of Cochise County to strengthen childhood lead poisoning prevention efforts in this area.

Outdoor media used to warn against the dangers of lead glazed pottery and home remedies

SUNWISE SCHOOL PROGRAM

Skin cancer, representing one-half of all new cancers diagnosed annually, is the most common form of cancer in the United States, with more than one million cases reported annually. There are three types of skin cancer: melanoma; basal cell carcinoma; and squamous cell carcinoma. Melanoma, the most deadly of all skin cancers, is increasing faster than any other cancer in the United States. In Arizona, statistics show a 150% increase in melanoma cases since 1973 and a 44% increase in deaths from melanoma. The incidence rate of the three types of skin cancer in male Caucasians in the United States is 14 per 100,000 population, in Arizona it is 38 per 100,000. Those who live in Arizona develop potentially deadly skin cancer twice as often as people in other states and are second only to Australians in the rate of skin cancer.

Exposure to solar and artificial ultraviolet radiation appears to be the most important environmental factor in the development of skin cancer, including the deadliest form melanoma. Eighty percent of a person's lifetime exposure occurs before the age of 18. Children's skin, particularly before the age of 10, is especially vulnerable to the harmful effects of ultraviolet rays. Just one blistering sunburn in childhood more than doubles the risk of skin cancer later in life.

As a result of these findings there is increased concern regarding children's sun behavior. Specific objectives were developed to increase sun safety behaviors in Arizona.

Arizona SunWise Program Objectives

Increase the percentage of Arizona children who regularly use effective sun protection by 2010

Implement an effective media and public service campaign to promote sun protection for children in Arizona

Investigate methodology to increase reporting of all three forms of skin cancer in order to determine rates and prevalence for Arizona

The Arizona Department of Health Services adopted the SunWise school program from the U.S. Environmental Protection Agency. The SunWise school program is an environmental and health education program for elementary schools that teaches children how to protect themselves from overexposure to the sun. Through the use of classroom based, school based and community based components, SunWise develops sustained sun-safe behaviors in school children.

Currently in 84% of schools, children play outdoors in the middle of the day when UV radiation is at its peak and only 16% of Arizona schools have some kind of shade structure on school grounds.

SunWise Toolkit

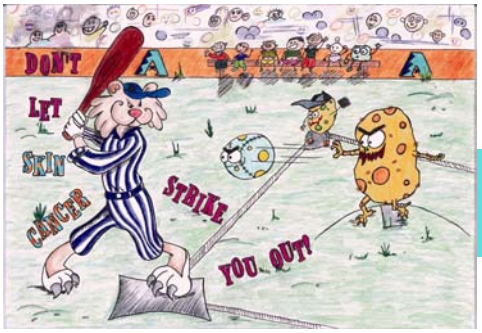
SunWise schools receive materials that facilitate cross-curricular classroom learning. The program also encourages schools to provide sun-safe infrastructures and to promote sun protection policies for example: providing shade structures, promoting the use of hats, sunscreen and sunglasses.

Since 2003, the Arizona SunWise Program has enrolled 650 schools statewide and has reached more than 34,300 children and trained over 300 teachers.

SUNWISE SCHOOL PROGRAM

The Arizona SunWise Program has also formed a number of partnerships to accomplish the program's sun safety objectives. A primary partner is the SHADE Foundation, which was established by Shonda Schilling, wife of former Arizona Diamondbacks player Curt Schilling.

The SHADE Foundation co-sponsored the first poster–drawing contest for school children to increase awareness about sun-safety. Every Arizona school was invited to submit posters and over 3,100 posters were entered in the contest. The winning artist won Diamondbacks tickets, received an on-field award from Curt Schilling and threw out the first pitch at the Melanoma Monday baseball game. All poster submissions received a personalized certificate of award signed by Curt Schilling. The winning poster was reproduced and distributed to schools and pediatric offices throughout Arizona.



2003 Winning SunWise Poster

The Arizona SunWise Program now serves as a model for other states working to educate and protect children from melanoma and other skin cancers.

Children learn to protect themselves from over exposure by applying sun screen.

Sunscreen with an SPF 15 or higher is recommended.